Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) A light-emitting thyristor, comprising:

a GaAs substrate; and

a GaAs buffer layer provided on the GaAs substrate; and

four layers consisting of a first conductivity type of AlGaAs layer and a second conductivity type of AlGaAs layer stacked alternately on the buffer layer wherein the four layers form the light-emitting thyristor;

wherein the AlGaAs layer just above the buffer layer is composed of a plurality of AlGaAs layers, Al compositions thereof being increased upward in steps.

2. (Original) The light-emitting thyristor of claim 1, wherein a quantum well layer or a strained superlattice structure is inserted into the uppermost layer of the plurality of AlGaAs layers.

3. (Currently Amended) A light-emitting thyristor, comprising:

a GaAs substrate; and

a GaAs buffer layer provided on the GaAs substrate; and

four layers consisting of a first conductivity type of AlGaAs layer and a second conductivity type of AlGaAs layer stacked alternately on the buffer layer wherein the four layers form the light-emitting thyristor;

wherein the Al composition of the AlGaAs layer just above the buffer layer is increased upward continuously.

4. (Original) The light-emitting thyristor of claim 3, wherein a quantum well layer or a strained superlattice structure is inserted into the AlGaAs layer just above the buffer layer.

5. (Original) A light-emitting thyristor, comprising:

a GaAs substrate;

a GaAs buffer layer provided on the GaAs substrate; and

four layers consisting of a first conductivity type of AlGaAs layer and a second conductivity type of AlGaAs layer stacked alternately on the buffer layer;

wherein a quantum well layer on a strained superlattice structure is inserted between the buffer layer and the AlGaAs layer just above the buffer layer, or into the AlGaAs layer just above the buffer layer.

6 -11 Canceled.

12. (Previously Presented) A self-scanning light-emitting device, comprising:

a structure in which a plurality of light-emitting elements each having a control electrode for controlling threshold voltage or current for light-emitting operation are arranged, the control electrodes of the light-emitting elements are connected to the control electrodes of the light-emitting elements are connected to the control electrode of at least one light-emitting element located in the vicinity thereof via an interactive resistor, and a plurality of wirings to which voltage or current is applied are connected to electrodes for controlling the light emission of the light-emitting elements,

wherein the light-emitting element is a light-emitting thyristor as set forth in any one of claims 1-5.

13. (Previously Presented) A self-scanning light-emitting device, comprising:

a structure in which a plurality of light-emitting elements each having a control electrode for controlling threshold voltage or current for light-emitting operation are arranged, the control electrodes for the light-emitting elements are connected to the control electrode of at least one light-emitting element located in the vicinity thereof via an electrically unidirectional element, and a plurality of wiring to which voltage or current is applied are connected to electrodes for controlling the light-emission of light-emitting elements,

wherein the light-emitting element is a light-emitting thyristor as set forth in any one of claims 1-5.

14. (Original) The self-scanning light-emitting device of claim 13, wherein the electrically unidirectional element is a diode.

15. (Previously Presented) A self-scanning light-emitting device, comprising:

a self-scanning transfer element array having such a structure that a plurality of transfer elements each having a control electrode for controlling threshold voltage or current for transfer operation are arranged, the control electrodes of the transfer elements are connected to the control electrode of at least one transfer element located in the vicinity thereof via an interactive resistor, power-supply lines are connected to the transfer elements by electrical means, and clock lines are connected to the transfer elements, and

a light-emitting element array having such a structure that a plurality of light-emitting elements each having a control electrode for controlling threshold voltage or current are arranged, the control electrodes of the light-emitting element array are connected to the control electrodes of said transfer elements by electrical means, and lines for applying current for light emission of the light-emitting element are provided,

wherein the light-emitting element is a light-emitting thyristor as set forth in any one of claims 1-5.

16. (Previously Presented) A self-scanning light-emitting device, comprising:

a self-scanning transfer element array having such a structure that a plurality of transfer elements each having a control electrode for controlling threshold voltage or current for transfer operation are arranged, the control electrodes of the transfer elements are connected to the control electrode of at least one transfer element located in the vicinity thereof via an electrically unidirectional element, power-supply lines are connected to the transfer elements by electrical means, and clock lines are connected to the transfer elements, and

a light-emitting element array having such a structure that a plurality of light-emitting elements each having a control electrode for controlling threshold voltage or current are arranged, the control electrodes of the light-emitting element array are connected to the control electrodes of said transfer elements by electrical means, and line for applying current for light emission of the light-emitting element are provided,

wherein the light-emitting element is a light-emitting thyristor as set forth in any one of claims 1-5.

17. (Original) The self-scanning light-emitting device of claim 16, wherein the electrically unidirectional element is a diode.